

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION - SOUTH DISTRICT - MAINTENANCE SUPPORT




PLANS AND SPECIFICATIONS FOR:

CONTRACT NO: T201707603 P6: 17-12003

CONTRACT TITLE: STRUCTURE MAINTENANCE,
OPEN END, SOUTH, FY19-FY21

PLANS PREPARED BY: TIM PHILLIPS (DESIGN TECHNICIAN)

PLANS REVIEWED BY: P. Wayteller DATE: 12/21/17
MAINT.SUPPORT SUPERVISOR

<p>DATE RECOMMENDED: <u>1/2/2018</u></p> <p>ASSISTANT MAINT. ENGINEER: <u>Matthew J Schlitter</u></p>	
<p>DATE RECOMMENDED: <u>01.03.18</u></p> <p>MAINTENANCE ENGINEER: <u>J. McCluskey</u></p>	
<p>DATE RECOMMENDED: <u>1-2-18</u></p> <p>SOUTH DISTRICT ENGINEER: <u>[Signature]</u></p>	

SOUTH DISTRICT

STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY18-FY20

CONTRACT DESCRIPTION

The purpose of this contract is to make repairs and perform preventative maintenance to various bridges and culverts throughout Sussex County. The work may include, but not be limited to: crack sealing decks, bituminous pavement repair, coating parapets and sidewalks, expansion joint replacement, riprap placement, concrete repair and replacement, coating of railings, and any other corrective actions taken to enhance bridge lifecycle and safety. The contract will also include the restoration of roadways and surrounding areas by use of paving, grading, placing of topsoil and hydroseed, riprap and any other work required to complete each work order. There may be peak hour restrictions for some locations, which will be addressed at the issuance of the work order. In the event that a location(s) requires night work, the associated items will be negotiated separately.

The specific work sites are not listed herein but will be assigned as available by the South District Maintenance Support office as locations are funded.

1. The DelDOT project manager is responsible for ensuring any required documents and analysis as part of the adopted work zone safety and mobility procedures and guidelines have been completed prior to any work starting on this contract.
2. It is anticipated that all work will occur within DelDOT's right of way. Should the need occur to trespass onto railroad property, including the highway-rail crossing; it will be the responsibility of the DelDOT project manager to contact the railroad chief engineer and obtain written authorization prior to such work.

The Contractor, however, shall be responsible for obtaining the required clearances and insurances for each railway company involved if the railroad property and/or facilities are located within or near the proposed limits of work and/or if the proposed work encroaches upon the railroad's right of way; in accordance with DelDOT Maintenance of Railroad Traffic item 801501. The contractor must contact DelDOT's railroad section manager at 302-760-2183 prior to the start of any work to coordinate the execution of the appropriate agreements and authorizations required from any railway company involved, including coordination of railroad flagging, if necessary.

3. It is anticipated that all work will occur within DelDOT's existing right of way or easement areas. Should the need occur to trespass onto private property; it will be the responsibility of the DelDOT project manager to secure such trespass needs prior to the start of work.
4. No environmental permits are required for this work provided no jurisdictional wetlands or waters are impacted. If there is any question as to whether or not a water or wetland is jurisdictional, the contractor shall contact the DelDOT environmental section at 302-760-2264 prior to the start of work.
5. No utility relocation is anticipated, however encountering utilities is anticipated. Should any conflicts be encountered during construction requiring adjustment and/or relocation of the agencies' existing facilities, the necessary relocation work shall be accomplished by the respective agencies' forces, as directed by the District Engineer. Any adjustments and/or relocations of municipally owned facilities shall be done by the state's contractor in accordance with the respective agencies' standard specifications as directed by the District Engineer. Payment shall be made using contract unit pricing or where no pricing is available; it shall be negotiated prior to the commencement of work.
6. The DelDOT project manager shall be responsible for coordinating with the traffic section relating to any impacts to traffic section facilities (including but not limited to traffic loops, junction wells etc.) in advance of the start of the activity.
7. Prior to initiating any work on this contract, the contractor shall be responsible for preparing and submitting for approval of the safety section a maintenance of traffic plan. Sufficient time shall be provided for the review and approval of the plan. The maintenance of traffic plan shall include proposed time restrictions on the closure of travel lanes subject to the approval of the safety section.

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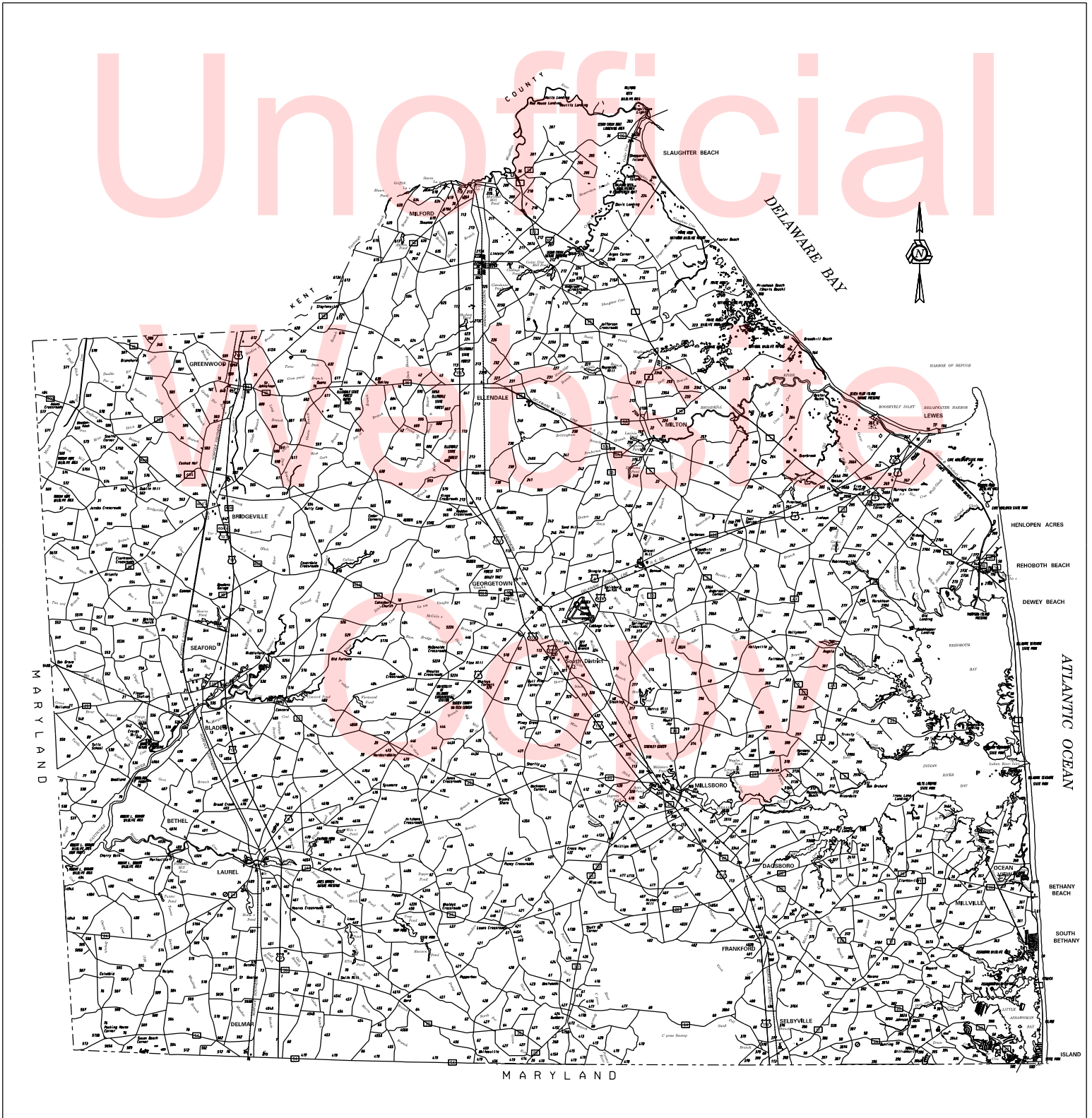
OF

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SOUTH DISTRICT

STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

SUSSEX COUNTY



DEPARTMENT OF TRANSPORTATION

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GENERAL CONTRACT NOTES

1. Construction of this contract shall conform to Delaware Department of Transportation Standard Specifications dated August 2016 as amended by the Supplemental Specifications, the Special Provisions, the most recent Standard Construction Details, the Delaware Manual of Uniform Traffic Control Devices the Bridge Design Manual, and these plans.
2. The purpose of this contract is to make general improvements to bridges and culverts within South District (Sussex County). In lieu of section 104.06 of the standard specifications and depending on fund availability, the Department reserves the right to add or delete quantities to this contract. Such quantity additions or deletions shall not be cause for an increase or decrease in any contract unit bid prices. No item prices are to be renegotiated due to either an increase or decrease in quantity usage resulting from said additions or deletions. In addition, the contract shall not expire upon reaching the award amount. Depending on fund availability, the contract amount may be increased or decreased. Any increase or decrease shall not be cause for the contractor to discontinue work nor is the contractor owed the entire award amount if the entire award amount is not met.
3. The Department reserves the right to prioritize, substitute, add, or delete locations at any time during the contract.
4. During the contract, the contractor shall submit two-week (or as required) "look ahead" schedules to the area engineer/manager no later than noon of each Thursday. Details shall include a description of each work activity, the planned days of work, multiple crews or shifts, and scheduled working hours. Failure to comply will result in a suspension of all contract work with time charges continuing to be assessed.
5. Work will be scheduled via work orders from the district. Work locations will vary in size. The work orders will indicate the work to be performed at each location and the given time for the completion of the work.
6. The contractor shall commence work indicated on the work order no later than the seventh (7th) calendar day after issuance unless required materials are not available. Non-availability of materials shall be verified by at least three (3) different sources. Verification shall be formal and supplied by the contractor in writing. If there is a verified non-availability of materials, time charges shall commence on the first (1st) working day following the delivery date of said materials.
7. Issuance of each work order constitutes the Notice to Proceed with the work described on the work order. Failure to comply with the work order completion date will result in charged liquidated damages based on each work order and section 108.08 of the standard specifications. Each work order shall be considered a separate unit of work. The Engineer will make payment monthly for the completed work as outlined in section 109.07. Upon the substantial completion of the work at an individual location, the Engineer will stop time at that location and perform a semi-final inspection for the work order location in accordance with subsection 105.16. If the work is satisfactorily completed, the Engineer will release the contractor from maintenance responsibility for that location. The Engineer reserves the right to require the contractor to add work or make repairs to completed locations at the Department's expense until such a location has been accepted by the Department. The contractor must repair all defects in the work caused by poor workmanship or materials at their own expense until the Department performs a final inspection and accepts the contract. A final inspection will be completed on an annual basis for work orders completed in a calendar year. Upon satisfactory completion of the final punch list, the Department will accept the location and release the contractor from responsibility for the work at that location. If a work order is sufficiently large and complex as determined by the Engineer, a final inspection may be held upon the completion of that work order. Any punch list work generated from these inspections is also subject to liquidated damages if not completed within the allotted time.
8. All work added shall be performed at contract unit prices. In the case where contract unit prices are not available the prices are to be negotiated prior to the commencement of work.

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GENERAL CONTRACT NOTES (cont.)

9. Any and all construction engineering, including survey and/or layout of pipes, drainage ditches, structures, etc., shall be incidental to the items being installed. The contractor should anticipate the need for construction engineering and bid items accordingly.
10. The contractor is reminded that section 105.07 of the standard specifications require the general contractor to have a competent superintendent or foreman on the project at all times.
11. No separate payment shall be made for location mobilizations, with the exception of item 763000, which shall only be paid once. Any additional costs for mobilizing equipment, materials and/or personnel shall be included in the price bid for the work being performed.

PROJECT NOTES

12. Any and all clearing and grubbing shall be negotiated separately as required per location. Pricing shall be agreed upon prior to the commencement of work. Grubbing activities in wetland areas may require environmental permit approvals which shall be obtained by the DeIDOT project manager.
13. Item 301001, GABC, Type B, shall be used as base material under all curb, sidewalk and pavement.
14. All Portland Cement Concrete must be received from an approved production plant unless otherwise approved by the engineer. Only calibrated volumetric concrete trucks will be permitted to provide on-site mixtures. This pertains to both work occurring during normal working hours and nighttime restricted work.
15. Payment for item 610000, Portland Cement Concrete Masonry, Class A, and item 610016, Portland Cement Concrete Masonry, Class D will be made based on the actual measured quantity placed (in CY).
16. Unless otherwise directed by the Engineer, expansion material in accordance with section 1042, shall be placed at each location where item 762001, Saw Cutting Concrete, Full Depth, is paid. Payment for furnishing and placing the expansion material shall be incidental to item 762001.
17. The area and depth of deteriorated concrete removed in spalled areas shall be pre-approved by the engineer prior to removal (minimum 2" depth).
18. Crack widths larger than one half inch shall be repaired by grouting. Payment will be under item 602572, Repair Existing PCC Structures.
19. Disposal of unacceptable materials shall be as per specification section 106.08 and shall be at the contractor's expense.
20. All streambeds affected by the contractor's work shall be restored to original contours and elevations, unless otherwise directed by the Engineer. Payment shall be incidental to the contract.
21. Environmental permits will be required for any riprap placement in waters/wetlands and will be obtained by the DeIDOT project manager prior to the commencement of work.
22. Channel excavation does not require environmental permits provided the following conditions are met: **A:** Work is occurring at a non-tidal location; **B:** The sediment is "scooped"—not bladed (pushed); **C:** The "scooped" sediment is placed in an upland location. If all of these conditions are not met, work shall not commence until environmental permits have been obtained by the DeIDOT project manager.

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PROJECT NOTES (cont.)

23. Submittals for wet and dry applications are required for item 628001, Repair of Concrete Structures by Epoxy Injection. These submittals shall be reviewed by DelDOT Bridge Section for compliance and usage.
24. The cost of clipping the edges back, picking up and disposing of excess material and sweeping and clearing existing pavement prior to overlay shall be incidental to the paving item.
25. All transverse vertical differences, raised edges of manholes, catch basins, etc. shall be ramped with TRM at a 20:1 or flatter slope prior to opening the roadway to traffic and shall be suitably maintained until final paving. Pavement millings will not be permitted for this purpose. All TRM shall be incidental to the item causing the vertical difference.
26. The use of trench boxes and steel plates (where allowed) shall be incidental to the work requiring the use of these items. No separate payment shall be made for the use of these items.
27. The contractor shall take care in removing pavement around utilities, butt joints, curbs, etc., so as to not disturb the existing pavement beyond the specified depth. Any damage caused by the contractor's operation may result in placing leveling courses at the contractor's expense. The removal and cleanup of the hot mix residue wedge remaining after milling operations shall be incidental to the milling item. The removal of existing raised pavement markers (RPM's) shall be incidental to the applicable milling item and/or patching items. All milled material shall remain the property of the contractor unless otherwise stated.
28. Drainage inlets, which are 4' or greater in depth and are issued for repair will have steps installed in accordance with Section 602 of the standard specifications. The cost of the work shall be negotiated prior to the start of work.
29. Drainage inlet grates, which are not the 45-degree type shall be replaced. At locations where no patching is designated, this type of grate shall be replaced only when the catch basin is to be adjusted and/or repaired. The actual locations, the need for any grate modifications or for new frames shall be determined by the Engineer. The cost for the work shall be negotiated prior to the replacement of any drainage inlet grates.
30. Excavation for PCC curbs, sidewalk or valley gutter shall be incidental to the bid price for each respective item. Excavated material, not needed on the project, shall be removed from the project at the contractor's expense. When replacement of curb and gutter has been completed and the forms removed at each location of this contract, backfilling shall be done immediately. Complete restoration, topsoil, seeding, and removal of all materials for curb & gutter or sidewalk; sealing of valley gutters, flow channels and parging of catch basins, shall be completed within seven (7) calendar days. Failure to comply will result in a suspension of all other contract work with time charges continuing to be assessed.
31. All manhole adjustments placed in concrete shall require tack on all bituminous to concrete surfaces and joint sealing application per 1042.01.2. These items are incidental to the manhole adjustment.
32. All concrete to hot-mix interfaces shall require tack on all vertical surfaces. All longitudinal interfaces shall be sealed with a uniform 4" band of PG 64-22. These items are incidental to the bituminous warm mix item.
33. All newly created pavement joints that will not be overlaid shall be sealed with a uniform 4" band of PG 64-22, with the exception of where the adjacent pass to the newly laid pass has not cooled below 175 degrees Fahrenheit. All vertical contact surfaces shall be tacked before placing any new mixture against the joint. These items are incidental to the bituminous warm mix item. No separate payment will be made for the sealing of these joints.
34. The contractor shall give a two (2) weeks' notice to the property owner when any fixture, shrub or another object must be removed from the right of way or easement area. If the owner has not attempted to salvage this property, the contractor shall remove it without obligation. Compensation shall be incidental to the contract.

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MAINTENANCE OF TRAFFIC AND PAVEMENT MARKINGS

35. All work shall be performed in a manner that will reasonably provide the least practical obstruction to all road users, including vehicular, pedestrian and bicycle traffic and shall conform to the requirements of the latest Delaware manual on uniform traffic control devices (MUTCD) part 6, herein referred to as the traffic control manual (including revisions in effect at the time of advertisement for bids).
36. At the preconstruction meeting, the contractor shall submit to the south district safety officer the necessary NCHRP 350 / MASH certifications for all traffic control devices expected to be used on the contract. In addition, prior to the start of any work order, the contractor must submit a traffic control plan including any additional NCHRP 350 / MASH certifications not previously submitted. Written approval must be received before the start of work at each and every location.
37. Prior to the start of work on any work order, the contractor shall submit detailed drawings (including but not limited to existing striping lengths, lane and shoulder widths, turn lane lengths, locations of stop bars, turn arrows, crosswalks and railroad crossings) that depict the existing pavement markings for each project location. These drawings will be reviewed by the department's traffic section to determine if any changes to the final pavement markings are required. Final pavement markings shall conform to all existing patterns unless otherwise directed by the engineer.
38. All required maintenance of traffic warning signs shall be paid for under item 810001, temporary warning signs and plaques. All warning signs shall be diamond grade retro reflective. Wood sheeting is not permitted.
39. No separate payment shall be made for the use of traffic cones. Traffic cones and/or work associated with their use such as set up, removal, cleaning, etc., shall be incidental to the work for which they protect.
40. All traffic control devices shall be in new or refurbished condition, shall comply with the traffic control manual, shall be NCHRP 350 / MASH approved, and shall be approved by the engineer prior to installation.
41. All traffic control devices shall be suitably maintained at all times, including such maintenances as washing sign faces, replacing deficient batteries and lights, aligning properly, replacing reflective materials, relocating barriers, and any other maintenance of traffic control devices deemed necessary by the engineer or designee to maintain traffic in a safe and effective manner.
42. The contractor, with the engineer, shall inventory all signs on all roads subject to improvements. Necessary signs shall be maintained in operation during construction and any other signs shall be properly stored with the contractor, who shall be responsible for loss or damage. Immediately prior to final inspection, the contractor and engineer shall again inventory the traffic signs and account for any lost or damaged signs.
43. The contractor shall be responsible for coordinating his/her work with other contractors in the area.
44. The contractor is responsible for ensuring that the traffic management center (1-302-659-4600) is notified each and every day when work is being performed in state right of way. The contractor must identify the type of work, any lane/s or shoulders closed, length of time for work, when the lane restriction is in place and when the lane restriction is picked up, contact person/number and state inspector.
45. The contractor shall be responsible for notifying the local 911 center, local schools, and the DeIDOT public information center of all roads and lanes to be closed a minimum of seven calendar days before the closure. If temporarily blocking access to a fire hydrant, notification must be given to Sussex County, the local firefighting authorities, and the 911 center.

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MAINTENANCE OF TRAFFIC AND PAVEMENT MARKINGS (cont.)

46. The contractor shall maintain access to and along pedestrian facilities at all times during construction. Earth, stone and gravel surfaces are not acceptable for providing pedestrian access. Where pedestrian routes are closed or blocked, alternate pedestrian access shall be provided using TA-28 and/or TA-29 of the 2011 Delaware Manual on Uniform Traffic Control Devices or to the satisfaction of the engineer. Pedestrian detour routes or alternate pedestrian facilities shall consist of ADA compliant facilities to the level of which exists on the pedestrian route. The cost for any provisions shall be negotiated prior to any work on these facilities.

Pedestrian maintenance of traffic: this work shall consist of providing and maintaining an accessible pedestrian route throughout the project limits in accordance with the Americans with Disabilities act of 1990 (ADA) title II, paragraph 35.130. The contractor shall be required to review each curb ramp location and submit the appropriate maintenance of traffic detail and devices to the engineer for each location at least 2 weeks before construction for review, comment, and approval by the district traffic safety officer.

The following considerations shall be taken into account when addressing accessible pedestrian maintenance of traffic:

- All pedestrians, including persons with disabilities, shall be provided with a reasonably safe, convenient and accessible path that replicates as much as practicable the existing pedestrian facilities.
- Maintain access to all businesses and residences at all times.
- provide pedestrian access through or around the work zone. If a detour is chosen the contractor must submit the detour route to the engineer for review and approval. The Detour route must meet or exceed the current conditions.
- Work should be phased so that all areas of an intersection/sidewalk path are not under construction at the same time unless a clear path is provided and identified.
- Traffic control devices and other construction materials and features shall not intrude into the usable width of the sidewalk, temporary pathway or other pedestrian facility.
- Signs and other devices mounted lower than 7 ft above the temporary pedestrian pathway shall not project more than 4 in into accessible pedestrian route.

A smooth, continuous hard surf ace shall be provided throughout the entire length and width of the pedestrian route throughout construction. There shall be no curbs or vertical elevation changes greater than ¼ inch in grade or terrain that could cause tripping or be a barrier to wheelchair use.

47. All persons working within the state right-of-way shall wear a minimum of an ANSI class II safety vest meeting the ANSI 107-2004 requirements.
48. The contractor is responsible for the maintenance of existing pavement within the project limits for the duration of the contract or as directed by the engineer or designee.
49. All roadways and entrances not open to traffic shall be closed using type III barricades and shall be placed per the traffic control manual, section 6f.63 & 6f.68.
50. The contractor shall give two (2) weeks' notice to the property owner when any fixture, shrub or other object must be removed from the right of way or easement area. If the owner has not attempted to salvage this property, the contractor shall remove it without obligation. Compensation shall be incidental to the contract.
51. When side roads intersect the work zone, additional traffic control devices shall be erected including permanent warning signs and shall be paid per contract unit prices.

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MAINTENANCE OF TRAFFIC AND PAVEMENT MARKINGS (cont.)

52. When required by the de MUTCD, permanent advance warning signs shall be installed with the legends road work 1500 ft, road work 1000 ft and road work 500 ft in advance of the work area in both directions. An end road work sign shall be located 500 feet downstream from the work area. On intersecting roadways within the project limits, a road work ahead sign shall be placed at distance not less than 500 feet in advance of the work area and an end road work sign shall be located 500 feet downstream of the work area. All permanent advance warning signs shall be ground mounted on two NCHRP-350 or MASH approved break-away posts and shall be mounted in compliance with the traffic control manual. Permanent advance warning signs shall be mounted at a height of 7 feet, measured from the roadway to the bottom of the sign. The use of skid mounted sign supports is not allowed unless the contractor can demonstrate that a utility conflict exists, which shall be verified by the engineer; or concrete medians prevent the installation of the permanent signs in the appropriate location. These "permanent" signs shall be paid as item 810001 on open-end contracts.
53. The contractor shall provide all residents and businesses that are adjacent to the work zone a minimum 48 hr. Prior written notice for the start of construction work. This notification shall include the scope of work, working hours, anticipated start and completion dates, contractor name & address, and DeIDOT contact numbers. Failure to give proper notice will result in a suspension of work requiring notice, until proper notice is provided. Access to all businesses and residences within the project limits shall be maintained throughout the duration of this contract. Any temporary closure of a driveway for tie-in purposes shall be coordinated with the engineer and/or property owner in advance of the closure.
54. All roadway excavation in or adjacent to travel ways shall be properly backfilled at the end of each day prior to traffic returning to unrestricted travel per section 6G.20 of the traffic control manual. This includes all utilities and/or obstacles within or adjacent to the travel ways as outlined in the Traffic Control Manual.
55. All storage of equipment and material shall comply with section 6G.21 of the Traffic Control Manual.
56. All flaggers shall comply with chapter 6E of the Traffic Control Manual.
57. The contractor shall submit a traffic control plan for approval ten working days before the start of work at each location. Restricted working hours will be in effect on state numbered roads as dictated by traffic volumes. The district may waive the flagging operation depending upon site conditions. The district will coordinate with the safety section for this waiver as necessary. Should a flagging operation be required, the flagger will be paid at the contract unit price.
58. If a road closure is required; the contractor shall be required to submit the proposed detour route to the district safety officer for approval. The detour plan must be submitted on DeIDOT Traffic's standard border sheet with the standardized symbols / legends and notes. The contractor shall also coordinate the closure with the district. The district will coordinate with the safety section and be responsible for the necessary emergency notifications. The detour route requires approval by the district prior to closure. Typically, the detour set-up shall follow TA-20 of the traffic control manual. The contractor shall be responsible for furnishing and maintaining the maintenance of traffic apparatus at the closure (i.e. Type III barricade, road closed signs, etc.) and all advance-warning signs. The contractor shall be responsible for placement of detour trailblazers.
59. All roadways and entrances not open to traffic shall be closed using type III barricades and shall be placed per the traffic control manual, section 6F.63 & 6F.68.
60. An American traffic safety services association (ATSSA) certified traffic control supervisor may be required for specific location issued on the work order. A copy of the certification card for the ATSSA traffic control supervisor shall be submitted at the pre-construction meeting. The paper certificate is not acceptable. The ATSSA officer shall be incidental to the work being performed and shall not be paid separately.
61. Prior to additional lifts, all drop offs shall be secured before the next lift per de MUTCD 6G.1.

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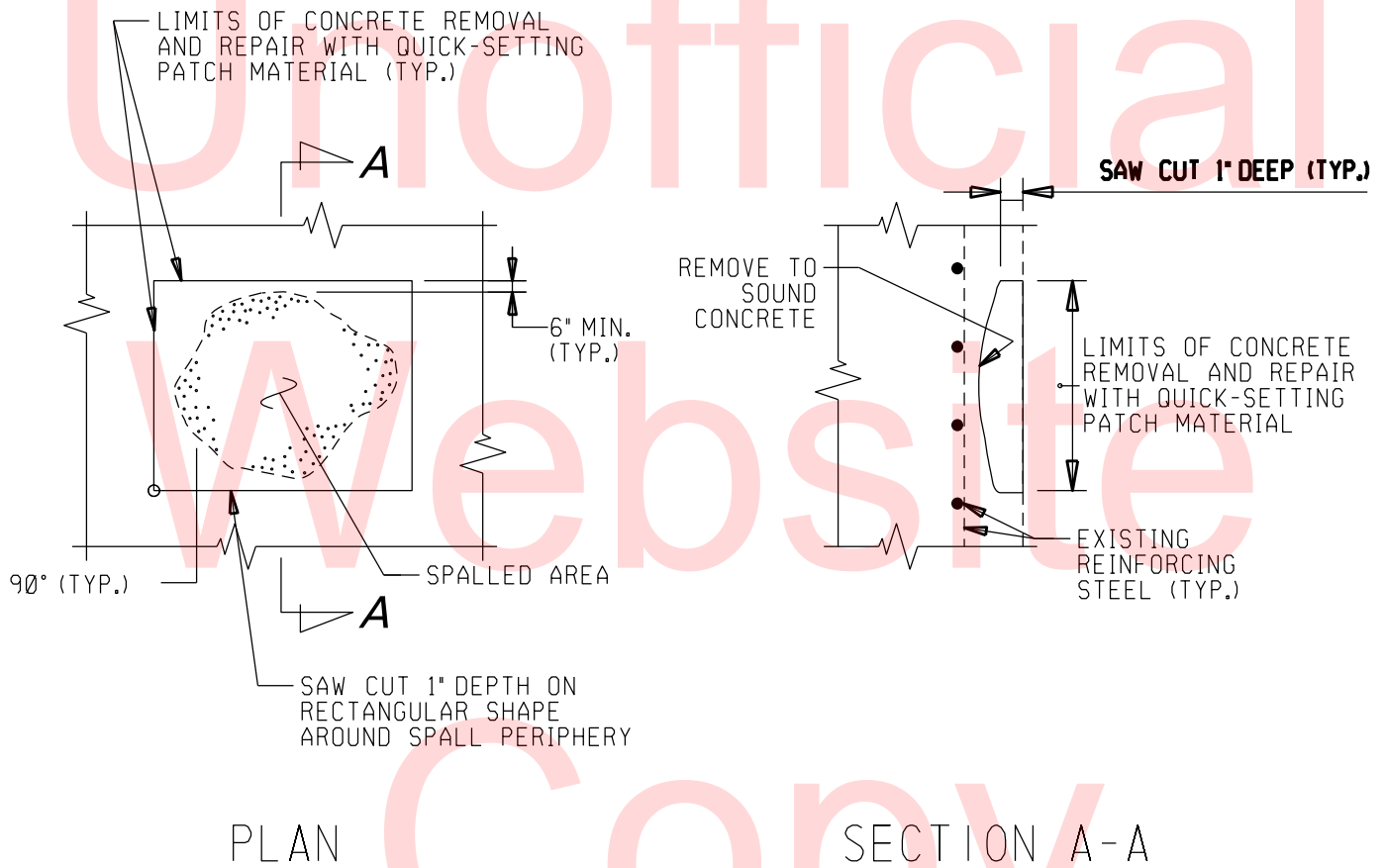
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MAINTENANCE OF TRAFFIC AND PAVEMENT MARKINGS (cont.)

62. All roadway excavation in or adjacent to travel ways shall be properly backfilled at the end of each day prior to traffic returning to unrestricted travel per section 6G.20 and table 6G-1 of the traffic control manual. This includes all utilities and/or obstacles within or adjacent to the travel ways as outlined in the traffic control manual.
63. The department will provide striping layout at locations where no pavement markings previously existed. If department forces provide striping layout on locations where markings previously existed, then the contractor shall reimburse the department for the layout costs.
64. Final pavement markings shall conform to all existing patterns unless otherwise directed by the engineer. The final pavement markings shall be placed within five (5) calendar days after the completion of the paving. Failure to comply will result in suspension of all other contract work with time charges continuing to be assessed.
65. Yellow center lines shall be continuous around median islands. All double yellow centerlines shall be placed in a 5-6-5 configuration (2 each, 5" yellow with a 6" gap between).
66. Any erroneous marking will not be paid for and shall be corrected immediately at the contractor's expense. Erroneous markings or shadows that exceed one (1) inch in width shall be removed by either sand or water blasting. No other removal methods will be allowed. An asphalt sealer shall be applied in the area of the removed marking to mask the repair. Any damage to the pavement caused by the removal of erroneous markings shall be repaired/replaced to the satisfaction of the engineer at the contractor's expense.
67. At the end of each day's operation and before traffic is returned to unrestricted roadway use, temporary striping shall be utilized at locations that require permanent striping. Temporary pavement striping must match permanent pavement striping in all regards. Temporary pavement markings shall be paid at the applicable contract unit price. The contractor is responsible for maintaining the temporary markings in good condition such that the pavement is properly delineated at all times. Any refreshing of the temporary markings will be at the contractor's expense.
68. Prior to the start of work, the contractor shall be required to show proof that he has sufficient approved striping materials on hand to ensure striping is completed prior to fully opening roadway to traffic.
69. All markings that are no longer in use and conflict with the pavement markings in use by the traveling public are to be removed and must be completely obliterated by a method approved by the engineer. Painting over the conflicting striping will not be accepted as a method of removal.
70. Maintenance of traffic, unless otherwise noted in the approved plans, shall conform to the appropriate traffic control typical application found in the latest version of the traffic control manual.
71. Traffic detection loops shall be placed in the final wearing surface unless otherwise directed by the engineer.
72. Traffic detection loops that are currently 5'x7' shall be replaced with loops that are 6'x6' at the same location. Stop bar detection loops shall be the same size as currently existing, and should be placed starting two feet behind the stop bar, unless otherwise directed by the engineer. If separate signal plans have been developed, the plans supersede this note.
73. Stop lines "bars" shall be installed in accordance with section 3B.16 of the latest traffic control manual.
74. All crosswalks shall be installed in accordance with section 3B.18 of the latest traffic control manual.

DETAILS

SHALLOW SPALL REPAIR

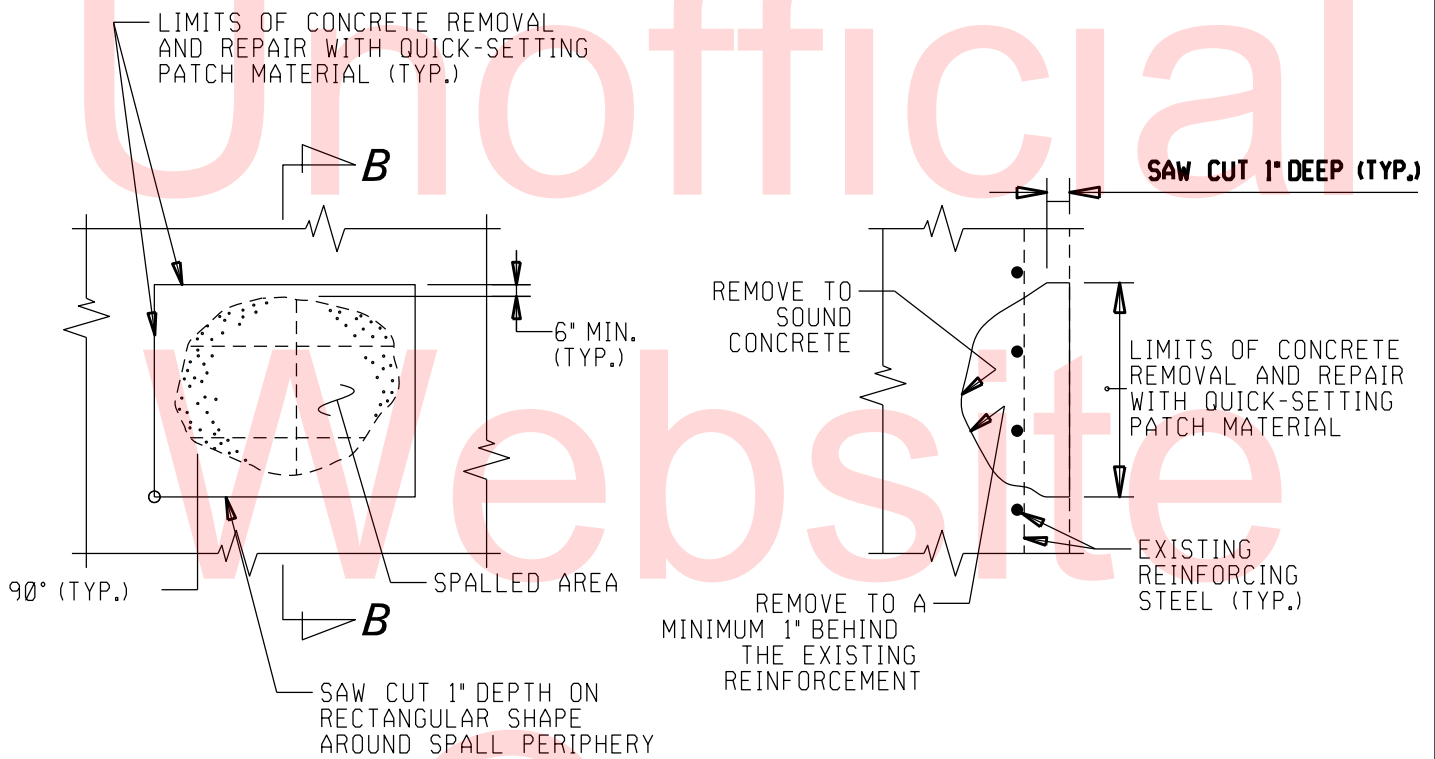


SHALLOW SPALL REPAIR NOTES

1. SHALLOW SPALLS ARE DEFINED AS PATCHES THAT DO NOT EXTEND BELOW THE TOP MAT OF REBAR.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL; CLEANING OF CONCRETE SURFACE; SURFACE PREPARATION; AND CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628040 - SHALLOW SPALL REPAIR.
3. FOR ANY SHALLOW SPALL REPAIR TO TAKE PLACE WITHIN THE SPLASH ZONE OR UNDERWATER, THE CONTRACTOR SHALL SUBMIT A WORKING DRAWING FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 628.03(E)(2).

DETAILS

DEEP SPALL REPAIR



PLAN

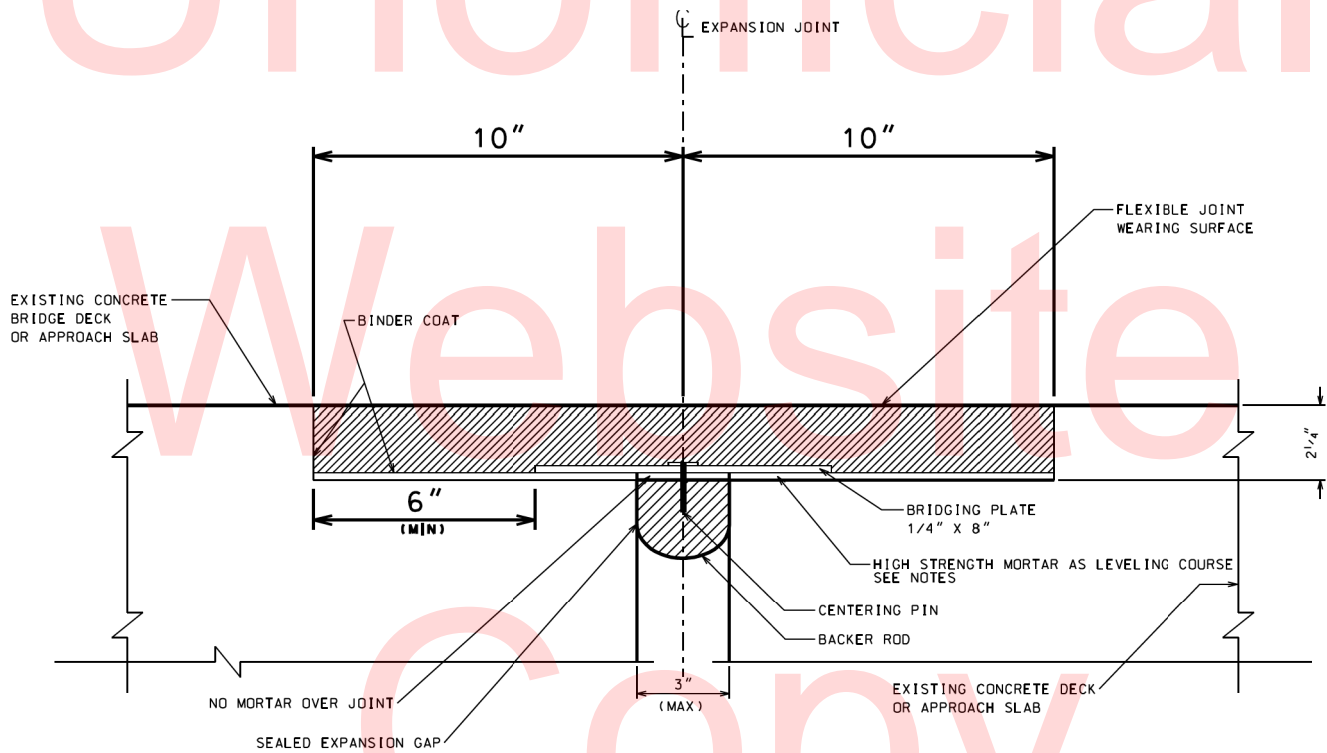
SECTION B-B

DEEP SPALL REPAIR NOTES

1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL; CLEANING OF CONCRETE SURFACE AND EXISTING REINFORCEMENT; REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES OR SECTION LOSS; PRESENCE OF CONTRACTION OR EXPANSION JOINTS; SURFACE PREPARATION; AND CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
3. FOR ANY DEEP SPALL REPAIR TO TAKE PLACE WITHIN THE SPLASH ZONE OR UNDERWATER, THE CONTRACTOR SHALL SUBMIT A WORKING DRAWING IN ACCORDANCE WITH SUBSECTION 628.03(E)(2).

DETAILS

ASPHALTIC PLUG JOINT



NOTE 1: MORTAR TO BE USED FOR LEVELING.
SEE PROJECT NOTES FOR MATERIAL SPECIFICATIONS
(INCIDENTAL TO PAY ITEM 605654)

NOTE 2: LEVELING COURSE SHALL BE FLAT AND LEVEL
TO ENSURE CONTINUAL SUPPORT OF BRIDGING PLATE.

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

LOCATION 1 (VARIOUS BRIDGES THROUGHOUT SUSSEX COUNTY) FROM TO
LENGTH
GENERAL IMPROVEMENTS
 STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19 - FY21

MATERIAL ESTIMATE FOR LOCATION 1

207000	STRUCTURAL EXCAVATION	100.00	C.Y.
208000	FLOWABLE FILL	30.00	C.Y.
209002	BORROW, TYPE B	100.00	C.Y.
211001	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	200.00	S.Y.
301001	GRADED AGGREGATE BASE COURSE, TYPE B	200.00	C.Y.
301002	GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	200.00	C.Y.
302002	DELAWARE NO. 3 STONE	100.00	TON
401005	SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)	200.00	TON
401014	SUPERPAVE TYPE B, PG 64-22	200.00	TON
401029	SUPERPAVE TYPE C, PG 64-22, PATCHING	125.00	TON
401030	SUPERPAVE TYPE B, PG 64-22, PATCHING	125.00	TON
401500	FOG SEAL	1,000.00	GAL
402000	BITUMINOUS CONCRETE PATCHING	2,500.00	SY-IN
608000	STEEL SHEET PILES, PZ 22	600.00	S.F.
610000	PORTLAND CEMENT CONCRETE MASONRY, CLASS A	40.00	C.Y.
610016	PORTLAND CEMENT CONCRETE MASONRY, CLASS D	40.00	C.Y.
610505	PARTIAL REMOVAL OF P.C.C. MASONRY	40.00	C.Y.
610506	REPAIRING EXISTING P.C.C. STRUCTURES	2,500.00	LB
610507	REHABILITATION OF CONCRETE STRUCTURE	180.00	C.F.
611001	BAR REINFORCEMENT, EPOXY COATED	2,000.00	LB
613000	EPOXY CONCRETE SEALER	3,200.00	S.F.
613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	3,200.00	S.F.
613003	HIGH MOLECULAR WEIGHT METHACRYLATE CONCRETE SEALER	3,200.00	S.F.
613004	WATERPROOFING MEMBRANE, TRAFFIC BEARING	3,200.00	S.F.
613005	WATERPROOFING MEMBRANE, NON-TRAFFIC BEARING	3,200.00	S.F.
615007	WELDING REPAIR	100.00	L.F.

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

LOCATION 1 (VARIOUS BRIDGES THROUGHOUT SUSSEX COUNTY) FROM TO
LENGTH
GENERAL IMPROVEMENTS
 STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19 - FY21

MATERIAL ESTIMATE FOR LOCATION 1

616003	TESTING AND DISPOSAL OF EXISTING HAZARDOUS STEEL COATING (REFER TO BREAKOUT SHEET)	1.00	L.S.
616501	MOISTURE CURED URETHANE PAINT SYSTEM (RECOATING, S.F.)	3,200.00	S.F.
623004	CLEAN AND GREASE BRIDGE BEARINGS	40.00	EACH
624000	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	180.00	L.F.
624009	ASPHALTIC PLUG JOINT	180.00	L.F.
624010	SILICONE JOINT SEAL, 1"	180.00	L.F.
624011	SILICONE JOINT SEAL, 2"	180.00	L.F.
624012	SILICONE JOINT SEAL, 3"	180.00	L.F.
624015	COMPRESSION SEAL, 3"	180.00	L.F.
624502	SILICONE COATED FOAM JOINT SEAL	180.00	L.F.
625000	LATEX MODIFIED CONCRETE OVERLAY INSTALLATION	2,000.00	SY-IN
625001	FURNISHING LATEX-MODIFIED CONCRETE OVERLAY	40.00	C.Y.
628001	REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION	400.00	L.F.
628011	CRACK SEALING BRIDGE DECKS, APPROACH SLABS, SIDEWALKS, ETC	800.00	L.F.
628020	ROUT AND SEAL CRACKS	300.00	L.F.
628040	SHALLOW SPALL REPAIR	75.00	C.F.
628041	DEEP SPALL REPAIR	75.00	C.F.
628051	DECK REPAIR, 1" TO 3" DEPTH	250.00	S.F.
628052	DECK REPAIR, 3" TO < FULL DEPTH	250.00	S.F.
628053	DECK REPAIR, FULL DEPTH	100.00	S.F.
628070	DRILLING HOLES AND INSTALLING DOWELS	200.00	EACH
628500	EMBEDDED GALVANIC ANODES	40.00	EACH
628501	DECK REPAIR, POLYESTER POLYMER CONCRETE	300.00	SY-IN
707015	RIPRAP, R-4	80.00	TON
707016	RIPRAP, R-5	80.00	TON
708003	GEOTEXTILES, RIPRAP	250.00	S.Y.

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

LOCATION 1 (VARIOUS BRIDGES THROUGHOUT SUSSEX COUNTY) FROM TO
 LENGTH
 GENERAL IMPROVEMENTS
 STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19 - FY21

MATERIAL ESTIMATE FOR LOCATION 1

760010	PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	1,500.00	SY-IN
760013	PAVEMENT MILLING, PORTLAND CEMENT CONCRETE PAVEMENT	1,500.00	SY-IN
762000	SAW CUTTING, BITUMINOUS CONCRETE	500.00	L.F.
762001	SAW CUTTING, CONCRETE, FULL DEPTH	500.00	L.F.
802003	ARROW PANELS TYPE C	100.00	EA-DY
803001	FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	100.00	EA-DY
804001	FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	50.00	EA-DY
805001	PLASTIC DRUMS	2,000.00	EA-DY
806001	TRAFFIC OFFICERS	20.00	HOUR
807002	FURNISH AND INSTALL TEMPORARY P.C.C. SAFETY BARRIER, PINNED IN BITUMINOUS PAVEMENT	800.00	L.F.
807007	REFLECTOR PANELS	200.00	EACH
807010	REMOVE TEMPORARY P.C.C. SAFETY BARRIER, PINNED IN BITUMINOUS PAVEMENT	800.00	L.F.
808002	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	100.00	EA-DY
809001	INSTALL TEMPORARY IMPACT ATTENUATOR	3.00	EACH
809005	FURNISH TEMPORARY IMPACT ATTENUATOR - NON-GATING, REDIRECTIVE, TEST LEVEL 3	3.00	EACH
810001	TEMPORARY WARNING SIGNS AND PLAQUES	2,500.00	EA-DY
811003	FLAGGER, SUSSEX COUNTY, STATE	500.00	HOUR
811015	FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	50.00	HOUR
813001	TEMPORARY BARRICADES, TYPE III	1,000.00	LFDY
817009	TEMPORARY MARKINGS, TAPE, 4"	2,500.00	L.F.
817013	PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	2,500.00	L.F.
817031	REMOVAL OF PAVEMENT STRIPING	1,000.00	S.F.
817032	REMOVAL OF PAVEMENT MARKING TAPE	1,000.00	S.F.
908014	PERMANENT GRASS SEEDING, DRY GROUND	500.00	S.Y.
908020	EROSION CONTROL BLANKET MULCH	300.00	S.Y.

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

CONTRACT QUANTITIES SUMMARY SHEET

207000	STRUCTURAL EXCAVATION	100.00	C.Y.
208000	FLOWABLE FILL	30.00	C.Y.
209002	BORROW, TYPE B	100.00	C.Y.
211001	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	200.00	S.Y.
301001	GRADED AGGREGATE BASE COURSE, TYPE B	200.00	C.Y.
301002	GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	200.00	C.Y.
302002	DELAWARE NO. 3 STONE	100.00	TON
401005	SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)	200.00	TON
401014	SUPERPAVE TYPE B, PG 64-22	200.00	TON
401029	SUPERPAVE TYPE C, PG 64-22, PATCHING	125.00	TON
401030	SUPERPAVE TYPE B, PG 64-22, PATCHING	125.00	TON
401500	FOG SEAL	1,000.00	GAL
402000	BITUMINOUS CONCRETE PATCHING	2,500.00	SY-IN
608000	STEEL SHEET PILES, PZ 22	600.00	S.F.
610000	PORTLAND CEMENT CONCRETE MASONRY, CLASS A	40.00	C.Y.
610016	PORTLAND CEMENT CONCRETE MASONRY, CLASS D	40.00	C.Y.
610505	PARTIAL REMOVAL OF P.C.C. MASONRY	40.00	C.Y.
610506	REPAIRING EXISTING P.C.C. STRUCTURES	2,500.00	LB
610507	REHABILITATION OF CONCRETE STRUCTURE	180.00	C.F.
611001	BAR REINFORCEMENT, EPOXY COATED	2,000.00	LB
613000	EPOXY CONCRETE SEALER	3,200.00	S.F.
613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	3,200.00	S.F.
613003	HIGH MOLECULAR WEIGHT METHACRYLATE CONCRETE SEALER	3,200.00	S.F.
613004	WATERPROOFING MEMBRANE, TRAFFIC BEARING	3,200.00	S.F.
613005	WATERPROOFING MEMBRANE, NON-TRAFFIC BEARING	3,200.00	S.F.
615007	WELDING REPAIR	100.00	L.F.
616003	TESTING AND DISPOSAL OF EXISTING HAZARDOUS STEEL COATING (REFER TO BREAKOUT SHEET)	1.00	L.S.
616501	MOISTURE CURED URETHANE PAINT SYSTEM (RECOATING, S.F.)	3,200.00	S.F.

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

CONTRACT QUANTITIES SUMMARY SHEET

623004	CLEAN AND GREASE BRIDGE BEARINGS	40.00	EACH
624000	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	180.00	L.F.
624009	ASPHALTIC PLUG JOINT	180.00	L.F.
624010	SILICONE JOINT SEAL, 1"	180.00	L.F.
624011	SILICONE JOINT SEAL, 2"	180.00	L.F.
624012	SILICONE JOINT SEAL, 3"	180.00	L.F.
624015	COMPRESSION SEAL, 3"	180.00	L.F.
624502	SILICONE COATED FOAM JOINT SEAL	180.00	L.F.
625000	LATEX MODIFIED CONCRETE OVERLAY INSTALLATION	2,000.00	SY-IN
625001	FURNISHING LATEX-MODIFIED CONCRETE OVERLAY	40.00	C.Y.
628001	REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION	400.00	L.F.
628011	CRACK SEALING BRIDGE DECKS, APPROACH SLABS, SIDEWALKS, ETC	800.00	L.F.
628020	ROUT AND SEAL CRACKS	300.00	L.F.
628040	SHALLOW SPALL REPAIR	75.00	C.F.
628041	DEEP SPALL REPAIR	75.00	C.F.
628051	DECK REPAIR, 1" TO 3" DEPTH	250.00	S.F.
628052	DECK REPAIR, 3" TO < FULL DEPTH	250.00	S.F.
628053	DECK REPAIR, FULL DEPTH	100.00	S.F.
628070	DRILLING HOLES AND INSTALLING DOWELS	200.00	EACH
628500	EMBEDDED GALVANIC ANODES	40.00	EACH
628501	DECK REPAIR, POLYESTER POLYMER CONCRETE	300.00	SY-IN
707015	RIPRAP, R-4	80.00	TON
707016	RIPRAP, R-5	80.00	TON
708003	GEOTEXTILES, RIPRAP	250.00	S.Y.
760010	PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	1,500.00	SY-IN
760013	PAVEMENT MILLING, PORTLAND CEMENT CONCRETE PAVEMENT	1,500.00	SY-IN
762000	SAW CUTTING, BITUMINOUS CONCRETE	500.00	L.F.
762001	SAW CUTTING, CONCRETE, FULL DEPTH	500.00	L.F.

DELAWARE DEPARTMENT OF TRANSPORTATION

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SOUTH MAINTENANCE STRUCTURE MAINTENANCE, OPEN END, SOUTH, FY19-FY21

CONTRACT QUANTITIES SUMMARY SHEET

763000	INITIAL EXPENSE/DE-MOBILIZATION	LUMP	SUM
802003	ARROW PANELS TYPE C	100.00	EA-DY
803001	FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	100.00	EA-DY
804001	FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	50.00	EA-DY
805001	PLASTIC DRUMS	2,000.00	EA-DY
806001	TRAFFIC OFFICERS	20.00	HOUR
807002	FURNISH AND INSTALL TEMPORARY P.C.C. SAFETY BARRIER, PINNED IN BITUMINOUS PAVEMENT	800.00	L.F.
807007	REFLECTOR PANELS	200.00	EACH
807010	REMOVE TEMPORARY P.C.C. SAFETY BARRIER, PINNED IN BITUMINOUS PAVEMENT	800.00	L.F.
808002	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	100.00	EA-DY
809001	INSTALL TEMPORARY IMPACT ATTENUATOR	3.00	EACH
809005	FURNISH TEMPORARY IMPACT ATTENUATOR - NON-GATING, REDIRECTIVE, TEST LEVEL 3	3.00	EACH
810001	TEMPORARY WARNING SIGNS AND PLAQUES	2,500.00	EA-DY
811003	FLAGGER, SUSSEX COUNTY, STATE	500.00	HOUR
811015	FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	50.00	HOUR
813001	TEMPORARY BARRICADES, TYPE III	1,000.00	LFDY
817009	TEMPORARY MARKINGS, TAPE, 4"	2,500.00	L.F.
817013	PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	2,500.00	L.F.
817031	REMOVAL OF PAVEMENT STRIPING	1,000.00	S.F.
817032	REMOVAL OF PAVEMENT MARKING TAPE	1,000.00	S.F.
908014	PERMANENT GRASS SEEDING, DRY GROUND	500.00	S.Y.
908020	EROSION CONTROL BLANKET MULCH	300.00	S.Y.